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Vol. ~~XXII~~ 1 MARCH 1956 No. 3

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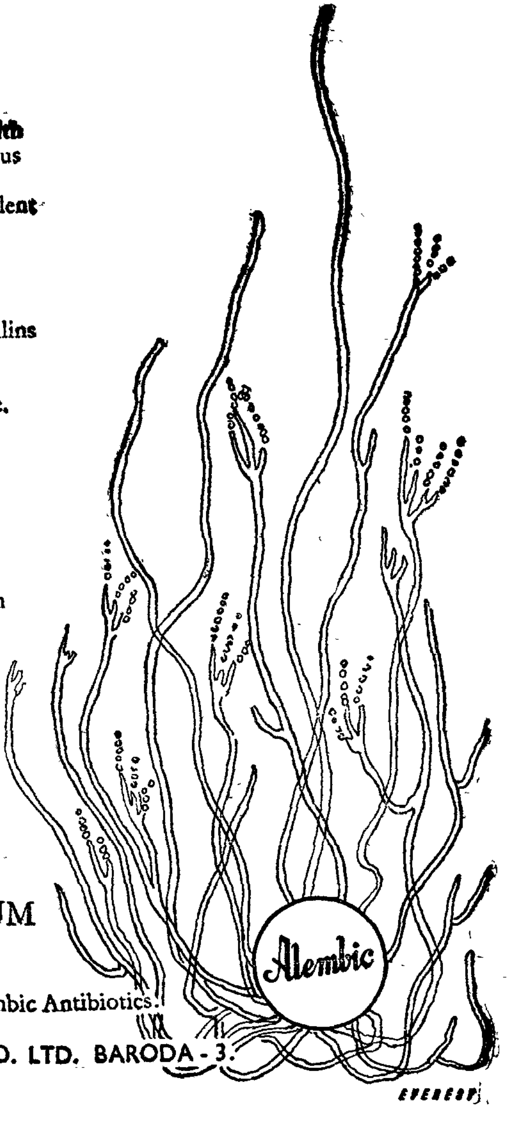

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THE MADRAS CLINICAL JOURNAL

JOURNAL OF THE MADRAS STATE BRANCH OF THE INDIAN MEDICAL ASSOCIATION

VOL. XXII] MARCH 1956 [NO. 9

ACUTE GLOMERULONEPHRITIS

By :

Dr. N. VAIDYANATHAN, M. D.,

Physician, Govt. Stanley Hospital,

and

Professor of Medicine, Stanley Medical College, Madras.

It is mostly a disease of childhood, greatest incidence being between 3 and 8 years — 60-70% occuring in the 1st decades of life - only 30 - 40% occuring in people over 70 years of age.

It is a condition demanding much skill in the management of the emergencies occuring in its course such as, acute Ventricular failure, acute hypertensive encephalopathic attacks, and episodes of reversible acute Renal failure.

It is necessary to make a reference to the work of Ellis and his associates and the classification of glomerulonephritis which they have evolved into **Type I and Type II** which has served to impress upon us an essentially useful clinical division with the added advantage of combining the porgnostic significance of the two types. Thus Type I carries a uniformly good prognosis of about 84% complete cures, particularly in children, while Type II has a bad prognosis mostly. Effective treatment can thus be given in Type I and only palliation can be attempted in Type II. I am now going to speak of Type I only and their management.

The close relationship of antecedent infection, (streptococcal or staphylococcal etc.) to this condition has to be mentioned as noteworthy. Though chemotherapy and antibiotics have been used in the treatment of these infections, no appreciable decrease in the incidence of acute nephritis has been observed over the recent years.

Particular reference must be made here to **3 important clinical features,** which in addition to being diagnostically valuable for Type I, carry also prognostic value. They are:—

1. The constitutional symptoms.
2. Haematuria.
3. Elevated blood pressure.

✪ Lecture delivered at the Tanjore Branch of I. M. A. on 16—10—55.

It may be stated as a generalisation that the degree of the manifestations, singly, or all together are prognostically significant as under :—

a. Grossly exaggerated. (hypersthenic)	Bad - most complications occur and most fatalities in this group.
b. Moderate degree. (Sthenic)	Prognosis excellent. Most cases recovering completely.
c. Little or no appreciable change (Asthenic)	Prognosis bad - most cases lapse to chronicity.

Complications are.-

Congestive Heart failure.

Acute Left Ventricular failure with acute Pulmonary Oedema hypertensive encephalopathy (most common in little children)

Acute uraemic episodes (least common in children)

MANAGEMENT :

1. **GENERAL : Primarily bed rest:-** strict and prolonged and enforced from as early a stage as possible. The earlier it is, the better the prognosis. Avoidance of exposure to cold and upper respiratory tract infections.

2. **DIETETIC: Fluid** intake not much restricted in the acute state provided salt intake is restricted-salt free till diuresis and then not more than 0.5 gm. daily.

Proteins restricted or avoided in the acute stage-after which during convalscence - return to normal protein intake is indicated to make good protein losses - and help maintain general condition free from deterioration.

3. **DRUGS :** Diuretics useless in the acute stage and best avoided.

Antibiotics: appropriate ones to be given for at least 3 weeks - and to be continued if albumen begin to appear in the urine again - long acting Penicillin probably useful. Bicillin 1.2 millions units I. M. once a month.

Sulphanilamide also used satisfactorily. Active removal of foci must be postponed.

Antihistamines with large dose of Vit C. are useful in my opinion - others have not much to say for them.

A. C. T. H. and cortisone - no use in acute phase.

Nitrogen Mustard-still experimental.

Sedatives and Digitalis for cardiac failure suitably.

In children for hypertensive encephalopethic attacks.

Mag. sulph 50% solution - I. M. 0.2 cc/Kgm. for lowering B. P. during attacks - *Veratrium* derivatives have also been found useful.

NEPHROTIC SYNDROME

Consists of

Oedema - usually considerable.

Proteinuria-impressive qualititatively.

Hypoprotenaemia with reversal of alb. globulin ratio.

Hyperlipaemia and hypercholesteraemia.

and seen in a passive child or adult-greatly swollen and pale. It is

worth remembering that dramatic changes in water balance occur in this condition spontaneously and often suddenly. - leaving the patient without oedema.

This condition indicates renal tubular dysfunction and may also be due to damage to the tubules as occurs in mercurial nephrosis.

While occuring as a clinical entity by itself (which is of still the subject matter of dispute) it also occurs in the course of proven glomerulonephritis, in Kimmelstein - Wilson syndrome (Diabetic nephrosis), in Renal amyloidosis, syphilis, and in systemic lupus erythematosis.

24-hour Urinary protein excretion usually exceeds 5-grammes - It is usually constant in a patient who is in a state of balance - but is increased by intercurrent infection or excess of intake orally or by the vein. It diminishes during remissions or when the condition goes on to uraemic phase of the disease, when the serum protein levels also increase towards normal.

The many metabolic and functional disorders noted in these patients are not fully understood.

1. *Low basal metabolic rate* - and the marked tolerance to Thyroid in large doses of these children - (but without any consistent reduction in oedema)

2. *Hypercholesterolaemia and hyperlipaemic* are constant features with hypocal caemic and unusual bone changes.

3. The *changes in the water balance* are not usually corralated with changes in the sodium or other electrolytes.

4. *The edema correlates imperfectly with serum protein* concentrations but it is better correlated with serum albumin levels though not consist ently always. Serum albumin deficit is not however the sole factor, as the electrolytes. Na and K are important in this regard.

5. The lowered concentration of *serum albumin* is curiously resistant to all methods of replacement, being excreted in quick time.

6. There is *marked reduction in Gamma globulin* and this results in a greater liability to infections as the resistance is lowered.

The nature of the syndrome is thus a mystery and we can just pay attention to the practical aspects of the question as to how best we can help towards recovery those in whom prognosis is good.

Management:- To the patient the oedema is the manifestation of the disease and he looks forward to lessening of this as evidence of improvement. However the course of the dropsy, apart from being capricious, seem to bear little relation to the long term prognosis.

It is important to bear in mind the objectives in treatment under these heads.

1. Preservation of what renal tissue remains.

2. Using this renal tissue to the best advantage.

3. Avoidance of certain complications which may be lethal.

1. Preservation of remaining of functioning nephrons.

Freedom from intercurrent infection and early adequate treatment of infection when it occurs, even relatively mild ones of the upper respira-

tory tract, dysenteries, Pneumococcal, Peri Nephri abscess *Transfusion of whole blood* carries with it risk of damage to the remaining nephrons and as such should be avoided.

2. Use of remaining nephrons to best advantage:-

(a) *High Fluid intake :-* When urine formation is less than 2cc. per minute, clearance of urea from blood is impaired. By keeping the urine excretion high, the kidney reserves are conserved. The practical clinical application of this principle is to obtain *effective urine excretion of 2.5 to 3 litres per 24 hours* - This must be the goal aimed at and if achieved consistantly will help prolong the useful and active span of the patient. The patient must be told that he should drink enough water for this and he will then arrange his intake suitably.

The important point to be emphasised here is that the taking of large quantities of water without added sodium will not increase the Oedema nor can the oedema be lessened by abstaining from fluids.

The need for Na or K intake has to be reviewed from time to time, particularly when due to forced or excessive diuresis Na and K are also being washed away in appreciable quantities.

Diet :- Attempts to achieve a positive nitrogen balance have been failures, however tried. High protein diet does not accomplish anything. It may damage the already sick nephrons and thus shorten the life span. Recent trends are for a moderate Protein diet 1/2 gm/Kgm per day with adequate calories and Vitamins and minerals. The appetite in these patients is often capricious and a diet with some latitude allowed for individual tastes is preferable to any strict prescribed diet.

3. Treatment of the Oedema :- The patient must be made to understand that the anasarca by itself is not dangerous, and that its appearance or disappearance is not in any way related to the progress of the disease.

When it causes distress it requires active intervention. Most current methods are not able to influence the oedema appreciably.

Posture has a great deal to do with the distribution of the oedema in the body. With bed rest fluid flows to abdomen and chest. Causing diaphragmatic oppression and distress. With erect posture the legs get swollen, cramped and but not very uncomfortable but the abdomen gets relieved - The patient must be encouraged to be up and about for at least 6 to 8 hours of the day and often longer. The oedema of the legs can be treated with Southey's tubes.

Na & K balance Some aspects are understood and others only imperfectly.

Whether a particular patient requires Na or K or they have to be restricted can be ascertained only by balance experiments over some time, on known intake and estimated out put measurements. But the undermentioned facts have to be borne in mind as any of them may be operating in our patient.

(1) A salt diet of 2or3 grammes per day may keep many patients in good balance.

(2) Exchange ion resins are not without danger.

3. Forced or excessive diuresis with mercurial diuretics brings about excessive loss of Na and K. This is not recommended.

4. The case may be the rare type of "salt losing kidney" when serious sodium depletion will occur.

5. Hypocalcaemia also occurs.

4. AMBULATION OR BED REST: Bed rest, brings about loss of muscle strength, bone structure, appetite and the will to live. They should therefore not be kept at bed rest, except for short periods. Otherwise they have difficulty in regaining muscle strength to resume upright posture. As mentioned earlier, the oedema increases and moves headward from the extremity causing respiratory and abdominal embarassment. It is therefore essential that the patient be encouraged to be up and about for about 10 hours daily, and to be able to walk short distances, easily and slowly. The gains therefore to the patient in strength and morale will be very obvious.

Complications are infections including Peritonitis. Pneumonia and Pericarditis, possibly due to the reduced gamma globulin fractions. The use of appropriate antibiotics are indicated like Penicillin in large doses—even on slight suspicion. For the course of peritonitis in an ascitic abdomen is often atypical. Lapartomy has largely been superseded nowadays by effective chemo and antibiotic therapy and conservative treatment.

The incidence of Venous Thrombus and thrombophelibitis are perhaps increased by bed rest - manifesting by increased oedema in the affected limb.

THERAPY

Pyrexial therapy:— Fever, sopntaneous or induced by TAB vaccine or exposure to measles cases etc. have often induced remission of varying duration. Results have not been consistant or permanent.

Intravenous Accacia gumma - given up - (Danger to liver)

Recent advances have been more hopeful in regard to the treatment **with ACTH or Cortisone and Nitrogen mustard**, singly and in some cases combined courses.

A. C. T. H. or cortisone: Farnsworth tried it first.

75-80% children and 40-60% adults showed good response with Diuresis and diminished protenuria while some few obtained permanent relief and others relapsed.

It is expected that long term treatment may ultimately be adopted to cure patients.

Children tolerate the treatment and respond well. Adults more often develop side effects of intolerance to ACTH.

Nitrogen Mustard:— First tried by Chassis, Goldring and Baldwin in 1949. Particularly useful in adults, not tolerating ACTH.

The course is to be repeated if no response, only after the bone narrow depression has been got over by examination of peripheral blood indicating marrow recovery.

8/22 cases recovered. Cases of considerable duration and advanced renal damage were not benefited and died. Others progressed to worse state, greater haematuria indicating poor response.

Combined ACTH and Nitrogen mustard was found to be successful in those cases which did not respond to either singly. 8/9 children responded satisfactorily.

Prophylaxis :- It is felt long acting Penicillin will control streptococcal infections and is worth a trial.

Conclusion :- I have indicated some of the newer ideas which are likely to help in the management of this distressing and prolonged condition of ill health - to make life more bearable. I have also indicated details of the recent trends in treatment. I have to add that A. C. T. H. and Nitrogen mustard are of no use whatsoever in the Kimmelsteil - Wilson syndrome and Amyloid disease - but very valuable in systemic lupus Eythematous, and of moderate hope in other types.

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DISEASED EAR

By :
Dr. T. M. SRINIVASAN, B.Sc., M.B.B.S., D.L.O. (LOND.) MADRAS.○

The title "diseased ear" should not be misleading : as it clearly connotes the presence of diseases in the ear. I am going to limit myself to diseases only, as against defects in the ear.

More often both deafness and discharge are found co-existing, but in such a manner that if one ear is efficient, and the discharge slight, then, the condition is liable to be ignored. The commonest condition is the "DISCHARGING EAR" and lately, it is demanding an increasing amount of attention. The running ear is a serious physical disability. The fact that in ordinary life, it may pass almost unnoticed is one of its greatest dangers; for its symptoms may be so slight that some sufferers are even unaware of its presence. It is also necessary to realize that there is still a great deal of indifference amongst the public to these commoner forms of disease in the ear and that further education of the "mothers" is necessary before the doctor will have the opportunity of treating the suffering children in the stages at which cure can be effected. The most important point to be remembered is that "running ear", in a majority of cases. *is a preventible disease;* and its presence can be taken to indicate negligence on the part of someone, be it parent, doctor or specialist! I would like to stress once again that every case of chronic running of the ear starts as an acute condition and it is in this stage that it can be easily and effectively treated.

I have introduced the symptoms of diseased ear to emphasize my points so far and this is the patern of my lecture today. It is alright for text-books to describe each disease, but, you will agree with me, when I say that the patients present us with symptoms only and it is the symptoms and signs that a doctor has to evaluate before he diagnoses and treats. Again a doctor has to elicit all signs and symptoms-positive and negative-before commencing therapy. To do this for a case of ear disease, ordinary methods of examination may not be enough. The presence of discharge or tenderness can be noted without difficulty but when it is loss of hearing or the examination of the middle ear, special apparatus and the knowledge to use them are essential. It may be that an ordinary general practitioner should know and do these to a large extent; but, when in doubt or when otherwise necessary—in the interests of the patient—he should be referred to a competent specialist. Finally as regards treatment, I have aimed at outlining simplified lines of therapy to meet the commoner types of disease or enough to tide over the temporary interval before the patient is seen by a specialist. I have also included a few lines on the emergency conditions in the ear though most of these, strictly speaking, are not "diseases of the ear"

Development, anatomy and physiology of the ear :-

In treating a case of ear disease the aim should not only be the full eradication of the disease but also to restore function as far as possible back to normal. I have endeavoured to

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○ Lecture delivered at Trichy Branch of I. M. A. on 17-12-55.

set forth some of the relevant facts about the development, anatomy and physiology of the ear which have to be remembered while treating cases of ear disease.

The external and middle ears with ossicles, ligaments, muscles, etc. are developed from the branchial arches, cleft and pouch with their attached nervous associations. In the same way the bony landmarks of the outer and middle ear are chiefly of membrane bone in conformity with the rest of the bones of the skull cap; while the petrous temporal bone housing the inner ear is preformed in cartilage along with the rest of the bones of the base of the skull. The 7th. nerve and its branches perforce lie in the substance of the bone. The lateral sinus of the brain & the jugular venous set-up are also closely related to the temporal bone. Please do not forget a very important organ of the body which is very intimately related to the temporal bone–viz the brain! The air spaces in the temporal bone are developed as extensions of the middle ear cavity proper and therefore their lining mucosa is contiguous with that of the tympanic cavity.

The primary function of the external and middle ears is to convey the sound vibrations to the cochlear mechanism and for this purpose, maintainance of equilibrium of air pressures on either side of the tympanic membrane is a compulsory factor. Similarly the presence of an intact mucous layer lined with columnar cells in the whole of the middle ear is a necessity for the efficient functioning of the ossicles. For instance with perforation in the drum there is a liability of the mucosa being lined (in areas) with stratified squamous epithelium which in turn may lead to adhesions, or erosions or even to cholesteatomata. The presence of the 10th. Nerve branch in the drum is responsible for the sudden onset of cough or collapse in some cases where treatment is carried out inside the external auditory meatus. The special shape and direction of the external auditory meatus and the drum should be remembered and the same are described in the section on examination of the ear.

Now is the time to review some of the basic accessory anatomical features which inadvertently aid and abet diseases of the ear. Foremost among them are the Adenoids and tonsils. No doubt they have their own functions; but often they are inflamed or infected or septic, when by sheer contiguity of tissues alone, the ears are affected. Indirectly the presence of infection in the nose and teeth also start diseases in the ears. By virtue of the existing anatomy, this spread of disease to the interior of the ear from these structures should not be surprising; what is really surprising is the fact that such occurrences are not more frequent than met with in everyday life. This is mainly due to Nature's own way of dealing with abnormal situations and it is our bounden duty to aid and assist Nature in all its associated activities.

Discharge.

This is a very common symptom, it is often seen alone, but it may be seen with one or more of other local symptoms like deafness, tinnitus & pain with or without signs of generalised constitutional disturbance. Causes of discharge :—

In some ways it can be boldly stated that the presence of ear discharge connotes the presence of a "social" disease — viz., the patients are from poorer classes with their tendancy to acquire frequently acute upper respiratory tract infections while living among not so satisfactory

sanitary surroundings. Sometimes the exanthematous fevers start off the ear condition. In all these cases, infection reaches the ear from the upper respiratory tract via the eustachian tube, especially with faulty drainage in the tympanic cavity. Occasionally direct or indirect trauma can introduce the infection into the middle ear cavity proper. By far the commonest cause is ascending infection via the eustachian tube. In fact the eustachian tube may be renamed appropriately as the "Main trunk road" by which infection is able to reach the tympanic cavity. The children especially, acquire ear disease primarily by the spread of infection via the tube from infected adenoids. For that matter any naso-pharyngeal infection can give rise to ascending infection of the tube. Very often this spread of infection fails to enter or to establish itself inside the middle ear cavity proper; it is only when the infection gains a foothold in the lining membrane of the tympanic cavity that the patient is said to have ear disease. In this connection it will not be out of place if I draw attention to some otherwise innocent acts of the patient: he forces infection or infected matter up the tube unconsciously by himself. Exposure to excessive pressure intraorally as in travelling in the aeroplane during its descent, or excessive nose-blowing or underwater swimming drives water or matter from the nasopharynx into the middle ear and if the nasopharynx happens to be infected then acute ear disease results. Chemical irritants like over - chlorination, (underwater swimming in tanks) are also known to start acute irritation in the middle ear. But, by far the commonest cause, as already stated, especially in children, is ascending infection from infected adenoids—acute otitis media in children occurring in the course of exanthemata is a case in point as only those cases which have prominent nasal purulent complications go in for an acute ear condition also. Unwise use of the syringe to cleanse the nose of its secretions may only force up some of the secretions into the middle ear. Packings of the nose, to control haemorrhage etc., or for that matter, anything that interferes with the proper aeration of the nose is liable to bring out middle ear inflammation.

The possibility of blood stream infection is always there. Rarely retrograde spread of infection as seen in cases with meningitis, is also met with. Infection may be introduced from the external meatus through a perforation in the drum; care must therefore be exercised when it is proposed to syringe the ear for wax etc. if there is a previous history of otorrhoea.

Causes of persistent suppuration in the ears :-

One or more of the following may be the cause in any case :-

1. *Disease of the underlying bone* :- The original infection may have been of such severity that there has been bone destruction either in the mastoid cell system or in the middle ear itself affecting the annulus which supports the drum membrane or in the ossicular chain.

2. *Granulations and polypi* :- Granulations may be formed by the destruction of the lining membrane of the middle ear Or a portion of the lining membrane or the granulation may be drawn through a perforation in the drum, becoming a polypus which grows steadily until it may, on occasion, project from the external auditory meatus.

3. *Cholesteatoma* :- Cholesteatoma is caused in most cases by the ingrowth of the epithelium from the external auditory meatus through a perforation on the edge of the drum membrane. As the epithelial cells become macerated and thrown off they become a mass of debris in which cholesterol crystals are deposited. This mass, though inert in itself, may, by the steady pressure of growth, erode any of the vital structures surrounding the middle ear, and may eventually invade the brain also.

4. *Naso-pharyngeal disease* and nasal disease are more frequently encountered in children than in adults & by constant reinfection of the eustachian tube, particularly when violent nose-blowing is the habit, they prolong the acute ear discharge into a chronic one.

The discharge in the ear is highly variable in quality and quantity. Thus it may be thick or thin; scanty or profuse; mucoid, muco-purulent or frankly purulent; serous or sero-sanguinous; with or without foul smell. In the course of the disease the quality of the discharge changes often. It is also a noticeable fact that most of the patients remark that their ear discharge is maximal at nights and early mornings: this is mainly due to the recumbent position assumed at nights. Only in chronic disease of the ear, discharge, though scanty, is found alone; and as a matter of fact the history of pain in a chronically discharging ear should put us on gaurd against occurrence of complications. In acute ear conditions usually other symptoms are also found simultaneously. Any incidental upset in the general health of the patient, though temporary, adversely influences the discharge in the ears. Often only one ear is actively discharging though there were occasions in the past when the other ear had the same trouble.

Tinnitus :-

Next in the order of frequency, the patients complain of tinnitus, which haunt them day and night. It is a subjective sensation of sound in the ear when the sound is not produced by any external agencies. True tinnitus is due to irritative lesions in the cochlea, its nerve, or its central parts. Other forms of tinnitus are :- Objective tinnitus which is not necessarily associated with organic disease of the ears; psycogenically induced noises in ears; noises in ears during general conditions like renal affections including hypertension; anaemia; drug – states as with quinine, salicylates etc. True tinnitus is always an expression of irritation of the cochlear mechanism and it is usually unilateral. It is possible to experience true tinnitus in almost all forms of ear disease, whether the lesion responsible is in the conductive or in the perceptive part of the auditory apparatus. Thus the cause may be in the external auditory meatus, middle ear, cochlear apparatus or cochlear nerve. If the deeper layers of the skin of the meatus are invaded by fungus or by infection or irritated by (swollen) vegetable foreign bodies in the canal, then this irritation is "translated" by the cochlear set-up as tinnitus (probably because of reflex hyperaemia inside the cochlea). In cases of acute myringitis, suppurative acute otitis media and also sometimes in chronic otitis media where there is retention of pus tinnitus is again felt probably because of the pressure of the exudates on the foramina or from congestion of the labyrinthine vessels or both. In Meniere's disease and otosclerosis tinnitus is probably due to metabolic disorders directly acting on the cochlea. Thus the actual reason for

the noises in the ear is still uncertain though various theories have been set forth. In all these conditions, the patients usually complain of changes in the severity of the tinnitus. This is chiefly due to changes in the general condition of the patient & his surroundings and not always due to changes inside the cochlea: thus tiredness, worry, or any psychological upset or the quiet at nights etc. all make the noises less tolerable or felt more acutely by markedly affecting the threshold of tolerance.

Loss of hearing:—

In all true middle ear diseases there is always some degree of loss of hearing. The hearing defect may be so slight that carefull testing is necessary to determine it, but the important point is that although almost imperceptible in the early stages it will inevitably progress if the disease remains active and unhealed. In diseases of the external ear there need be no loss of hearing unless the meatus is blocked in full. In diseases of the internal ear, it goes without saying that deafness is inevitable. The reason why patients do not complain of deafness in the early stages is because they realise that they are hard of hearing only after they lose nearly 40% of their hearing capacity; in other words, a person cannot realise the smaller losses in his hearing & conversational hearing is impaired only after a loss of about 40 decibles. Again, with smaller losses of hearing in one ear, a person can get along with the other ear without realising his defect. Interferance with the work of the ossicles is the commonest mechanism of the cause of the defect; often it is the accumulation of pus or discharge in the tympanic cavity proper. Occasionally dryness of the mucosa inside the middle ear cavity is known to interfere with ossicular activities. The one fundamental fact to be remembered is that the early small losses are recoverable. Loss of ossicles as in erosion etc. will give rise to greater degrees of deafness. In all the cases of conductive deafness the patients will volunteer that they are able to hear better in noisy surroundings and this phenomenon is called "Paracusis Wilsii."

The deafness is the most reliable sign in estimating the danger in middle ear disease: if a patient can hear well, there is very little danger and the ear condition may be allowed to settle; but, if there is deafness and there be middle ear suppuration, then the ear condition requires urgent attention. The degree of deafness varies with the slow or rapid onset of the disease and so due regard should be given even to smaller losses also.

Pain and tenderness:

As a rule pain is a most prominent symptom in all acute ear conditions. In other words, pain is not met with in all chronic cases. The exceptions are when some complications are superimposed on the existing chronic condition, and then the patient complains of pain.

Pain is chiefly the expression of the tension on the drum by collected matter as well as of the irritation by inflammation of the nerve-endings in the drum structure. The pain is usually described as sharp and piercing and located in the ear itself and does not seem to radiate in the early stages. This is the type of pain met with in acute middle ear diseases as against the type described hereafter which is typical of diseases of the external auditory canal: the pain is dull and aching in type and is usually

localized in front of the ear. In the diseases of the external ear, the pain is usually accompanied by tenderness over the tragus & on movement of the pinna or the tragus. Even the act of mastication and swallowing is acutely painful because of the proximity of the tempero-mandibular joint to the ear affected. As a rule there is no tenderness in cases of the middle ear disease unless there be extensions or complications. The pain is often very acute with the result that the patients require urgent relief. Where there is definite extension of the disease from the middle ear into the mastoid air cells, the pain and tenderness will be chiefly over the mastoid process itself.

Other symptoms met with in ear diseases are ;—

Locally — Swelling - seen in all cases of external otitis and in middle ear inflammations where mastoiditis has supervened;

"Bat's ears"-due to the pinna being pushed forward by the swelling behind it as is met with in mastoiditis.

Regionally — tender glands are liable to be met with often.

Remote — The general symptoms are usually a sharp rise in temp. and a dry tongue with a feeling of illness. In some cases of acute otitis media, its effect on the body as a whole is not easy to assess as the same is masked by the effects of the primary cold etc., which is responsible for the acute ear.

Examination of the ear.

The external auditory meatus is a narrow passage connecting the out-side with the middle ear cavity proper -only this passage is fully & effectively blocked by the drum membrane at its medial end. The canal is never straight except in new-born and very young infants; there is a slight curve in its length with the convexity directed upwards and forwards so that in an adult for a proper view of the drum, the pinna should be held slightly pulled upwards and backwards. The canal is not uniform in diameter in its entire length; it is less than a centimetre in diameter and there is a narrow isthmus a few millimetres lateral to the drum.

The drum itself is roughly a circular disc of membrane composed of 3 layers of which the external layer of squamous epithelium and the internal layer of mucosal) columnar epithelium are prominent in health. It is only in inflammatory or irritating circumstances that the middle layer of connective tissue becomes apparent and assumes importance. Thus we find in the drum, a structure where all three layers of embryonic life—the ectoderm, the mesoderm and the entoderm—are in close relationship to each other. The drum is pulled medially by the attachment of the hammer handle to the centre of the drum membrane; the result being that the drum now assumes a cone shape with the apex directed medially. A normal drum is a shining affair with only a triangnlar area of light reflex because the drum is fixed at an angle to the long axis of the external auditory cannal. In very young children this angle is maximal, almost reaching horizontal.

For a proper examination, a good source of illumination is necessary. An otoscope or a head mirror with a bright source of light are often relied upon. There is one essential prerequisite for the successful examination of the ear which must be strongly emphasized; and that is proper cleansing of the external

auditory meatus before examination. Lack of this precaution is probably responsible for more errors than any other single cause. Until the drum membrane is perfectly seen and clearly seen, especially the atic region, it is almost useless to attempt to form conclusions as to perforations, etc. Cleansing should be carried out with the ear syringe or by gentle mopping. Even though every precaution has been taken it may still be difflcult to come to a conclusion and other examinations may have to be made.

Of all the other observations, that of hearing is the most important and this should always be examined with care ; for, especially in cases of acute middle ear disease, it should always be borne in mind that the preservation of hearing is the chief aim. Conversational voice, whispered voice, and the tuning forks are the usual media for a consulting room testing. After a complete examination of the affected ear, the opposite ear also should be examined, followed by an examination of the nose and throat and, if necessary, of the whole body.

Diagnosis & differential diagnosis:-

Diagnosis of an acute ear infection in children is often not easy ; and it is often childern who form the bulk of patients. Their commonest affliction is acute otitis media; they are not able to co-operate; tuning fork tests cannot be elicited. In young children, who are very refractory, examination under anaesthesia is the best and satisfactory method especially where an accurate diagnosis is important.

Discharge does not appear in acute otitis media till the drum gives way. If there be acute pain localised inside the ear, associated with some deafness and no discharge, and if the drum on examination reveals signs of simple inflammation (redness, congested vessels etc , then the condition may be safely diagnosed as acute otitis media. It is only in the later stages that the drum starts to bulge out eventually giving rise to a perforation, which automatically releases the collected material thereby reducing the sensation of pain in the ear and introducing the symptom of discharge in the canal. The slightly impaired hearing also usually improves on perforation; and if there be any increase of deafness after perforation it is a sure sign that the disease is not clearing up or that some complications are to be expected. Similarly the general symptoms also subside after rupture, as otherwise, danger due to extension of the disease is to be inferred. Occasionally pulsation of the drum is made out by the apparent movement of the reflected cone of light; it means that active infection is still present inside the middle ear cavity. The presence of tenderness over the mastoid marks the presence of extension of disease from the tympanic cavity into the air cell system.

If there be acute pain, associated with tenderness and no deafness, and if the pain and tenderness are pretragal in character, then the case is one of external otitis. The external auditory meatus is swollen and narrow and tender or it might be blocked with debris and also be inflamed–the end result being that it will be very difficult to have a clear view of the entire drum in order to assess whether or not there is otitis media also. There may be swelling of the pinna and occasionally it may be very difficult to differentiate a case of external otitis from one of acute mastoiditis.

If there be acute pain in a case where there is previous history of chronic painless discharge, then the case is to be examined thoroughly to ascertain the origin of the pain and the diagnosis depends on the outcome of the results: swollen and tender mastoid suggests mastoiditis; a "stiff neck" with shooting temperature etc. reveal meningitis with or without extradural abscess or brain abscess or encephalitis; facial palsy denotes extensions of the inflammation into the facial canal etc. All these appear very simple to diagnose but in actual practice it is very difficult to sift their early signs, and experience plays a large part in helping the doctor. But fortunately these dreaded complications are rare.

If there be no pain, but only discharge and no other noticeable symptom except some degree of deafness and perhaps no traces of the drum at all, then we are dealing with a case of chronic otitis media – the only difference being that some vestiges of the drum might still be present in some cases and the site of the perforation helps us in assessing the prognosis, and treatment. The handle of the malleus is the determining point in placing a perforation. When in front of the handle, a perforation is said to be anterior; when behind posterior; and when just around the handle it is called central. If a perforation involves the edge of the drum, it is said to be marginal and if in the uppermost part. it is called attic perforation. In general, anterior perforations are rarely dangerous and cause only small loss of hearing and do not respond well to surgical treatment. The posterior and marginal perforations are the least favourable as they almost always indicate deep-seated disease leading to heavy loss of hearing and require surgical treatment for their cure. The presence of cholesteatoma leads one to expect a marginal perforation and to diagnose chronic otitis media. The attic perforations are the most difficult to diagnose and from the location of the disease nearest to the middle cranial fossa are potentially dangerous. They cause little functional disturbance & so may give rise to complications without previous warning. The central perforations may partake of the characteristics of the anterior or the posterior type according to its precise location and it must be examined with care for signs of chronicity such as granulation formation, etc.,

The external auditory canal may be filled with wax or fungus or debris when they sometimes produce symptoms mechanically unless there be infection also in the layers of the skin of the meatus when it becomes a case of acute external otitis which has already been mentioned.

Treatment :—

Essentially treatment of ear diseases resolves itself into two parts; the first part deals with measures whereby the recovery of function of the ear is given priority whereas the second part deals with preserving the life of the patient even at the expense of the function if necessary. It is rare to have recourse to the second part but this should not be forgotten.

General lines of treatment as rest in bed, warm surroundings, etc., are to be followed as for any other condition affecting the body, and, of course, this depends on the severity of the disease.

Locally there is the direct and indirect aspects; the direct deals with treatment to be instituted in the ear itself while the indirect part deals

with the associated features in the nose and throat in any given case of ear disease.

Infected adenoids and tonsils require attention either surgically or medically to start with and followed by surgical removal depending on the acuteness of the ear disease. Similarly any other areas of focal sepsis as the teeth etc. require careful assessment and treatment on general lines. The nose usually is affected or just recovering from a recent illness and it has to be brought back to normal as far as possible and as soon as possible. For this purpose a suitable solution with ephedrine as the chief ingredient is very good and it is to be used as nasal instillations, the frequency depending on the severity of the nasal condition. It helps to free the airway and the eustachian tube to a large extent wherby drainage of the collections inside the middle ear cavity is possible via the normal routes itself. The use of snuff or other insufflatory powders inside the nose is to be strongly deprecated as the powder tends to put the normal recovery mechanism in the nose out of gear and the body resources has to fight both the original disease and the added foreign matter. The nasal instillations are to be discontinued as soon as possible and to allow the beneficial effects to spread easily to the tubes it would be wise to order steam inhalations for which tr. benzoin is a very good vehicle. In these inhalations it has been found that the vehicles do not play an active part. It is the hot atmosphere that acts on the vasomotor control of the nasal vessels and brings about the necessary changes conducive to effective removal of all infected matter from the nasal passages. The use of throat paints to control infections in the pharyngeal surfaces is also now proved to be a waste; it does not mean that the results noticed after their use so far are to be belittled; it only means that the same results would have been obtained even without the said paintings. As a placebo the throat paint is an excellent one provided too vigorous a course of painting is not embarked upon. The treatment of the nasal, naso-pharyngeal and pharyngeal infections by medical means involves the use of chemotherapeutics & antibiotics and as these are to be prescribed anyway for ameliorating the acute ear condition itself, they may not be described in full now.

In the ear itself the treatment is governed by the circumstances everyday. Discharge is to be treated with meticulous care. It is no use putting in more and more of drops everyday if the same were not to come in contact with the diseased areas. The external auditory meatus has to be thoroughly cleaned daily once or if need be, more than once. The very process of drainage of the discharge is a delicate one. The discharge tends to come out only if it has a free egress; otherwise it will only erode the bone further. The presence of infection and infected matter invites vascularisation of the areas with the result that in the adjoining bones the calcium tends to be removed by the said increased vascularity. Hence the aim of the treatment should be to remove the discharges at least from the site of occurrence as often as possible. The usual method of removing the discharge from the meatus and middle ear cavity is by syringing gently with a warm & mildly antiseptic solution such as warm boric lotion. After syringing the ear clean, it should be mopped as dry as possible and treated with drying drops. One such drop is boric acid in rectified spirit. This type of drops may have to be diluted at first to make it tolerable to the patient. As the discharge dries up, insufflation of powders is resorted to; boric acid with iodine, penicillin-sulphonamide combinations, etc., are some of the powders used. But, lately the tendancy among specialists is to clean the meatus with dry wicks and swabs. This method

requires more patience and experience but it is better in the sense that no other extraneous matter is introduced which is not at our control and spread to the mastoid etc. as is possible in syringing; and instillation of H_2O_2 for instance–if a case of acute otitis media with a perforation were to be syringed in the recumbent position then in all possibillity we are inviting the spread of infection into mastoid air cells also. I personally prefer dry swabs to syringing in almost all cases.

INSTILLATIONS:–It has become fashionable to instill penicillin as dorps but there does not appear to be any evidence that this is any more effective than the other remedies and in some cases it is definitely harmful because it allows certain organisms, not sensitive to penicillin, to multiply at an abnormal rate. Other types of solutions of sulphonamides, some containing wetting agents, have been tried and recommended but they do not seem to have any special advantages. The essential factor in obtaining cessation of discharge is the careful cleansing which should precede any instillation. When sufficient skill is available, granulations and even small polypi can be destroyed with cauterising agents and the removal of these materially aids recovery of discharging ears.

IONIZATION:– Ionization is still practised with success. This consists of filling the ear with a 2% zinc sulphate solution and passing a small current (5 to 10 milliamps.) through it. A coagulum is formed of the discharge and the secretions diminish rapidly. This method is applicable chiefly to children and to allergic middle ear cavities with perforation in the drum; and above all it is time–consuming; and for it to be effective, it has to be carried out with meticulous care. It has of course, no place in the treatment of cases in which bone damage or other deep-seated disease is present.

The question as to how long these forms of treatment should be continued must depend upon the individual case and the response to treatment. Two or three months is not too long; it may be too short!

SURGICAL INTERVENTION:–In the absence of bone disease, the maintainance of hearing is the deciding factor in prolonging the medical treatment or recommending a patient for surgical lines of treatment. If the hearing is deteriorating, interference is demanded. The one exception to this rule is attic discharge; for, here, we have a potentially dangerous condition which affects hearing to a small extent only. Hence the advice previously given that the attic portion of the drum must be examined with care.

It is sometimes found that a polypus by blocking an opening through the drum membrane, keeps back discharges and makes the proper drainage, essential to recovery, almost impossible. By, so to speak, drawing the cork out of the bottle, in the removal of the polypus by surgical means, recovery can be materially aided.

The treatment which the surgeon will select depends upon his estimate of the extent of the disease; but, if he is allowed to see the patient in good time, a conservative type of operation, such as the modified radical mastoid operation will be selected. This will eradicate the disease and remove danger and at the same time will ensure the preservation of any hearing which remains, whilst the more destructive operation, the radical mastoid, will be avoided.

The question will be immediately asked as to what role chemotherapy and use of antibiotics can play in reaching the disseased areas which are not easily accessible by ordinary consulting room techniques. The answer

can be given without hesitation that chemotherapy is more likely to do more harm than good; for, in so far as our present knowledge goes, there seems to be little influence by either pencillin or the sulphonamides on chronic discharging ears. Chemotherapy is no substitute for surgery; but is one of the most powerful weapons against complications. The time for its use is in the early acute stages and when complications have given rise to a dangerous spread of infection.

The acutely painful conditions are, as already stated, acute otitis media, acute exacerbation in a chronic otitis media, acute spread of infection in a chronic otitis media and external otitis. The first three mentioned disease-states require as suggested just now, antibiotics and sulphas or surgical lines of treatment under penicillin cover. When it is a case of external otitis, often the treatment is simply application or drops like icthyol-in-glycerine ant hot dry fomentations. But, when the external otitis is due to otomycosis, unless the fungus is removed first and boric and spirit drops applied to the meatus, the condition is apt to flare up on the application of glycerine compounds. The removal of fungus is bound to be very painful in some cases and utmost gentleness in handling these cases is essential. Similarly, as the very act of mastication is very painful, the patient should be advised to have all feeds in a semisolid condition so as not to deprive the body of its energy resources. The use of antibiotics is permitted only as an adjunct to thorough cleansing of the ears and the ensuing application of glycerine or spirit drops. Otherwise the patient might recover from pain but not from the disease which will rear itself as soon as the drug is withheld. Hot water bottles are of very little use as the heat that is radiated does not reach the interior of the canal in noticeable quantities. Infra-red rays and short waves were once suggested as additional weapons against external otitis but their sphere of influence is only limited.

As regards TINNITUS, very often only palliative treatment has to be advised; valerian bromides, barbiturates, etc. have had their trials. Recently prostigmine was tried extensively but the results are not encouraging. It is the practice now in cases where serious organic damage is not expected or suspected, to advise the patient not to take so great a notice of this "disturbing noises" but to learn to ignore the same as far as possible. It is possible in many cases, by this advise, to create a sense of resignation to their disability without their feeling a sense of despair.

Sometimes it may be the general practitioners, duty to temporarily advise treatment till the patient is seen by a specialist. Such occasions are rare but they do turn up now and then. Common diseased states among them are extensions of infection into the vestibular mechanism, into the cranial fossa, into the jugular vein, bleeding polyp in the tympanic cavity, facial palsy etc. Other conditons where the doctor has to rush in his services are foreign bodies in the external auditory canal or road accidents. In most of these the general practitioner is justified in instituting symptomatic treatment along accepted lines of therapy. At regards the foreign bodies in the canal, it would be better to kill the animate foreign bodies before any attempt at extraction is carried out. Vegetable foreign bodies are apt to swell up on exposure to unsuccessful syringing thereby making their later removal further difficult. As the foreign bodies are often in refractile children, it will not be a bad idea at all to subject the patient to a whiff of anaesthetic so that the doctor can have a little time to extract the foreign body without creating any further damage to the canal.

In all these emergencies, if sedation of the patient is achieved temporarily then it gives the specialist and the patient time to meet each other in suitable surroundings. But, there should be no unnecessary loss of time in between the time when the seriousness of the situation was first discovered and the time when the patient is first seen by the specialist.

Conclusion:

I have tried to outline the simple treatment for a case of acute middle ear disease; viz., nasal decongestants and sulphas or penicillin or both. Usually, the latter part is prescribed rightly but the nasal decongestants are not prescribed with the result that the infection is mitigated without its complete eradication; and very soon the patient gets a recurrence and this goes on so long that the patient has developed insidiously a chronic complaint. Similarly in acute external ear cases, the offending cause, if removable like fungus etc., should be removed first and foremost; otherwise the maximum that medical treatment can do will be to mitigate the symptoms and not eradication. It is these half-treated cases that give a headache to themselves and to their doctors and even to the specialists. The specialists cannot come forward and denounce the family doctor as not having treated to the best of his knowledge and at the same time cannotignore the chronicity etc. in the disease pattern. What is more important is that where the hearing could be retained in full, it is at least, partly and irretrievably lost. Hence I would suggest that as a general rule, in the field of E. N. T., as in the field of Ophthalmology for instance, the general practitioner should not delay in seeking the aid of the specialist whenever the results of his treatment are not satisfactory or whenever there is reason to suspect that too quick a repetition of the symptoms or relapses are expressions of untreated but still, active, causes about which he has no comprehensive knowledge.

Finally, let me assure you that full and satisfactory preventive medicine is a far better achievement than a successful and eminently satisfactory curative therapy; a simple cold, which no mortal can escape, need not necessarily produce such a great number of sufferers with acute and chronic ears. But, unfortunately, this state of affairs requires the complete co-operation of the patients also and that is a thing which is at present still eluding the endeavours of this Noble Medical Profession.

One last remark which I subscribe to, especially, after my recent experiences abroad, is that the patient should not feel unnecessary pain and suffering while being treated; probe the ear we must, just as a surgeon has to cut into the tissues, but let us not make the patient, especially the small kids, Oh! let us not make them CRY!

MADRAS CLINICAL JOURNAL

MARCH 1956

EDITORIAL

COBALT IN ANAEMIA

The responsibility for the introduction of a new therapeutic agent, especially when it is likely to be employed in an extensive scale in the treatment of a very common ailment, is not to be lighty undertaken. Recently, the pharmaceutical industry has incorporated the trace mineral, cobalt, in preparations used in the correction of anaemias, more especially iron-deficiency anaemia against which it is said to have specific action. The existing methods of treatment of this syndrome are based upon the recognition and eradication of underlying causative factors, with or without supplementary treatment with iron. It is considered opportune, at this stage, to make a critical examination of the available information on the subject of cobalt and its therapeutic efficacy, with a view to compare the relative merits of the old and new methods of treatment.

In the intricate process of iron metabolism, various substances have been mentioned at various times as having some ancillary or catalytic action on it. Copper, manganese, zinc, germanium and vanadium have all been considered, and, at the present moment, their significance has lost many advocates. But the question of cobalt is different from these "trace elements" on account of the very important role it plays in animal nutrition. "Enzootic marasmus" is a condition in animals charecterised by varying degrees of anaemia, emaciation, arrest of growth, and loss of appetite. The liver of the affected animal is grossly deficient in cobalt, while, with the spleen and the kidney, it is found to have an excessive and rich deposit of iron. Administration of cobalt to thess animals effects a quick and prompt disappearance of the tissue iron deposit, and, at the same time brings about a remission of the condition[1]. This leads to the inference that, in animals, cobalt is able to mobilise and utilise iron stores, and it is highly probable that the excessive deposit of tissue iron is the direct result of cobalt defiiciency.

In man the requirement of cobalt is very small, and its deficiency has not been encountered as a pathological entity, nor has it been experimentally produced. The effect of administration of cobalt orally and parenterally to normal persons and to patients with iron-deficiency anaemia secondary to various aetiological factors has been studied. Weissbecker and Maurer[2] found that with a daily dose of 500 mg. of cobaltous chloride, normal persons showed a significant reticulocyte increase, followed by increase in red cells, haemoglobin content of the blood, and haematocrit. Robinson *et al* [3] corroborated these findings in the normal person and found that, in anaemic patients with chronic infection, adequate clinical and haematological response occured.

1. Underwood, E. J., Nutr. Abs. and Rev., 9: 515, 1940.
2. Weissbecker, L. and Maurer, L., Klin. Wschr., **24-25**; 855, 1947.
3. Robinson, J. C., James, G. W. and Kark, R. M., New. Eng. J. Med., **240**: 749 1949.

Berk *et al* [4] confirming the findings in normal individuals, observed no response in patients with iron-deficiency anaemia secondary to such conditions as leukaemia, nephritis etc. Weissbecker [5] using patients with hypochromic anaemia associated with aplastic anaemia, 'refractory' hypochromic anaemia, haemorrhage, malignancy, infection and leukaemia, found that, except in aplastic anaemia, varying degrees of responses were obtained in the other categories of patients. Muratore[6] experimenting with similar cases and using, in addition, patients with Cooley's anaemia, reported good results. Weissbecker[7] attributes the responses with cobalt to its ability to act by "blockading the hydrogen-transferring redox systems, which is compensated by polyglobuly", while Orten and Bucciero [8] think that it acts on account of its ability to form oxygen-binding complexes with cysteine and histidine, thereby inducing anoxia, the lowered oxygen tension favouring increased erythropoiesis. This might account for the production of polycythaemia in normal persons, but cannot explain, by the same mechanism, the response in anaemic persons in whom a state of anoxia pre-exists. Wolff [9] observed that administration of cobalt resulted in a good response, but that, the improvement lasted only for the duration of treatment, the condition relapsing sometime after the stoppage of cobalt therapy. This would indicate that cobalt acts by mobilisation of iron stores, and that the action terminates with the withdrawal of the mobilisation stimulus provided by cobalt. Further and more light is thrown upon the effect of cobalt by the preliminary work of Jatakia[10] who compared the responses, in his cases, obtained with a combination of intravenous iron and cobalt, with those observed with iron alone administered intravenously. He found that the effect of the combined therapy was markedly superior and quicker than that of iron alone. He also postulates that cobalt acts in virtue of its ability to mobilise iron stores.

Vora, [11] in similar cases, confirmed these findings and observes that the enhanced action of Cobalt-Iron combination is noticed on and from the second week of therapy and found the responses a month after treatment to be erratic. He feels that no conclusion can be drawn about the superiority of the combined treatment over plain iron therapy. He also feels that cobalt augments the effect of iron.

The possibility that the cobalt in vitamin B 12 (cyanocobalamin) may be partly responsible for the remarkable effect the vitamin has in indicated cases is disproved by Becker *et al* [12] who found that the oral or parenteral

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4. Berk, L., Burchenal, J. H. and Castle, W. B., ibid., page 754.

5. Weissbecker, L., Proc. 3rd. Inter. Cong. Haematol. Grune and Stratton, 1951, Cambridge. page. 68.

6. Muratore, F., ibid., page. 71.

7. Weissbecker, L., Lancet, i: 691, 1950.

8. Orten, S. M. and Bucciero, M. C., J. Biol Chem., **176**: 961, 1948.

9. Wolff, H., Med. Montschr., **5**: 239, 1951. (quoted by 10)

10. Jatakia, K. U., J. Ind. Med. Assn., **26**: 126, 1956.

11. Vora. D. D. Ind. Med. Sci. **10**: 19, 1956.

12. Becker, J. E., Smith, S. E. and Loosli, J. K. Science, **110**; 71, 1949.

administration of vitamin B12 to cobalt-depleted animals provoked no response.

Will the foregoing limited information on the experimental and clinical data available to us, constitue a challenge to the existing approach to the treatment if iron-deficiency anaemia, refractory or otherwise? It must be confessed, in the present state of our knowledge, it is difficult to answer the question. We can, however, try to answer a few questions on the subject, based upon the information we have set out.

1. Is cobalt a safe drug to administer orally or parenterally?

In a single large dose, or in smaller doses administrered over a prolonged period, oral administration is accompanied by nausea, vomitting, pyrosis, headache, muscle pain, angina and loss of appetite. Using cobalt in patients with cancer, Shen and Homburgher [13] found these reactions to be very distressing, and feel that in the treatment of a syndrome which is essentially a deficiency disease, the loss of appetite is a major reaction to be seriously considered as an important deterrant.

2. In effecting the haematological responses reported, is the action of cobalt physiological?

If the mode of action is as suggested by Orten and Bucciero [8] or advanced by Weissbecker [7], the indications are that erythropoiesis is accelerated by the creation of an artificial environment, and produced by the induction of processes which run counter to normal physiology. Weissbecker [7] himself admits as much, though he feels that cobalt should be used in certain cases, in certain circumstances and under certain defenite indications. If, as likely as not, the action of cobalt is by mobilisation of tissue stores of iron for purposes of erythropoiesis, the action should be considered physiological. though it does not help in producing an improved intestinal absorption of iron, nor is there any evidence to show that cobalt enhances the binding capacity of the serum for iron when the latter is simultaneously administered. Such action would be analogous to the 'mass action effect' mutually exerted among the vitamins in relation to one another.

3. What is the status of treatment of iron-deficiency anaemia with a combination of iron and cobalt?

It is evident that the effect of a combination of the two drugs is defenitely superior to that obtained withe iron alone, and obviously, of cobalt alone.[10] The improved effect may be attributable to an increased absorption of iron from the intestinal tract. There is no evidence to show that improved intestinal function follows therapy. In fact, if this occurs, the chances of relapse on stoppage of cobalt therapy noticed in Wolff's cases [9] would have been considerably less. The more probable reason for the enhanced response is perhaps because, the response is effected in a cumulative manner by the snperimposition of the effect directly produced by the injected iron, on to that obtained by the iron released from stores by cobalt. In cases or iron-deficiency anaemia associated with infection, malignancy etc., the iron diverted to the tissues

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13. Shen, S. C. and Homburgher, F., J. Lab. Clin. Med., 37. 182. 1951.

is very tardily released, leaving the the plasma in a depleted condition. The conjoint administration of cobalt might prevent this deep anchorage. Despite the defenite benefit resulting from cobalt, it must be remembered that, as with cobalt therapy by itself, chances of relapse are very real, as, stoppage of treatment, or further maintenance with iron alone, cannot, in the sort of cases mentioned, prevent the 'freezing' of the iron in the stores.

2. In infection and other conditions which exert an inhibitting action on normal iron metabolism, can the combined treatment with iron and cobalt be emloyed as a *routine* measure ?

In persons having a simple hypochromic anaemia, administration of iron orally, or, at best intravenously, can produce all the response that is wanted. For, in cases not complicated by any underlying pathology, it is not so much the internal metabolism as the internal iron balance that is disturbed. In infection, on the other hand, the anaemia is "a manifestation of a profound metabolic disturbance which accompanies inflammation and of which the changes in iron metabolism are but a part".[14] Since we are almost certain that cobalt or iron, individually or together can have no therapeutic effect direct or indirect, on the causative aetiology, treatment with either of the drugs, or a combination of them, could at best be an emergency one, and cannot be considered for *routine* use. This implies that, in practice, the underlying morbid condition has been recognised, and this type of treatment is adopted for enforcing the improvement of the general condition of a patien who had, due to the condition, developed iron-deficiency, and which requires early correction. Under these circumstances, and with the full realisation of the next step in the treatment to be adopted, cobalt certainly has a place in treatment of iron-deficiency anaemia.

But, paradoxically enough, this beneficial effect of cobalt may in itself contitute a potential danger. Hypochromic anaemia constitutes roughly about 80% of all cases of anaemia encountered in practice, and is the commonest sign of any long-term illness. Any therapeutic measure directed against it would obviously be in constant routine use in the hands of the general practitioner with all his limitations of diagnostic facilities. The dangers of losing sight of, or minimising the seriousness of the pathology responsible for the condition are very real under the circumstances. The dangers of neglect born out of a sense of false security following upon a forced clinical improvement cannot be over-emphasised. Nor can the physician afford to lose valuable time in suspecting the presence of such conditions as Hodgkins disease, early malignancy as in the case of the kidney incipient tuberculosis and other conditions which defy, for a time at least, absolute diagnosis. In our opinion, and out of experience, we very strongly feel that the case of a patient who does not respond to oral iron therapy, and responds only suboptimally or not at all with the parenteral treatment, must be reviewed very carefully, with an obscure and, perhaps, serious pathology very much in mind. Thus, even if we have decided to adopt cobalt as an emergency measure, we still have to take a very big and major slice out of the existing lines of attack,—" looking for the cause and

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14. Wintrobe: M. M., **Clinical Haematology**, 3rd Ed. 1951., Lea & Febiger Philadelphia.

treating it"—the one unchanging dictum in the practice of Medicine.

Indications are that cobalt, in the not too distant future, will find a place in our battery of anti-anaemic drugs. But, till then, it is our opinion that no substantial case has been made out for the inclusion of cobalt as a *routine* measure in the treatment of iron-deficiency anaemia. We feel that we have at our disposal, at the present time, more dependable and suitable methods of treatment and less hazardous expediences of attaining the desired effect than by the use of measures whose value has received only incomplete experimental and scientific sanction.

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NEW TEST FOR CANCER DETECTION

A promising new test for the detection of cancer has been reported by three United States researchers in the American Journal of Clinical Pathology. The report stated that this test, based on changes in blood serum, has proved at least 90 percent accurate in more than 1,700 cases.

Dr. James A. Quinn, Dr. Stanley A. Katz and Dr. Arthur E. Rappoport of Youngstown, Ohio, called their test "practical for mass screening, inexpensive, rapid, and easily mastered by medical technologists."

The test depends on a thickening of blood serum found in cancer patients but not in persons without cancer. In three separate studies made since October, 1953, the Ohio scientists found "distinct differences" in the optical densities of the plasma of cancer and non-cancer patients after clotted blood had been removed. For measuring the optical density of the blood serum they used a Coleman Junior spectophotometer, but they believe other similar instruments could be used.

False positive results, the Ohio report states were obtained mainly in cases where patients had acute and chronic inflammations or were pregnant and such conditions can usually be diagnosed in routine medical examinations. False negatives, on the other hand, were found principally in patients with highly advanced terminal cancer.

The researchers said the best test results were obtained in cases of early cancer. If cases of advanced cancer were eliminated in the findings, they said, the tests made in the three studies would have an accuracy of 96.5 percent.

Besides disclosing the presence of early cancer and the hidden and obscure types that often are not detected in routine medical examinations, the test may help surgeons by indicating whether a cancer has been completely removed or whether some remains and is continuing to grow and spread. In their report, the Youngstown doctors state: "We have collected considerable data which support the contention that a recurrence of a positive test in an operated individual usually indicates recurrence of clinical cancer, while a negative test indicates the absence of spreading cancer."

Since November 1954, when the tests on the three groups coverd in the report were concluded, the Ohio scientists have carried out the test on some 3,500 additional persons with results that continue to be "consistent and encouraging," particularly in use of the test as a screening tool.

A full evaluation of the new test is now being conducted by the U. S. Cancer Institute at Bethesda, Maryland. Medical science has long been seeking an accurate test that will show up early cancer, since many types of cancer are curable if its presence is known soon enough. If the test comes through the rigorous evaluation successfully, it may well fill the long-felt need of a tool for mass screening.

A U. S. I. S. Feature.

INDIAN MEDICAL ASSOCIATION

MADRAS STATE BRANCH

Minutes of the Annual Meeting of the Council of the Madras State Branch, Indian Medical Association, held at "Ratna Studios", Salem, on Saturday the 26th November, 1955, at 6 p. m.

34 Members were present. Dr. Y. P. Vasudevan presided.

28 Members expressed their inability of attending the meeting.

President's Introductory Remarks: The President thanked the members for the confidence reposed in him and for their co-operation. He appealed to the members to take a live interest in the Association and to enlist more members so that the Association would grow vigorously and be truly representative of the entire medical profession in the country. It is for the younger group of members to forge ahead and bear the torch.

Dr. J. Sugavanam and Dr. K. Ramanathan of Salem have been co-opted for this meeting of the Council.

A Condolence Resolution condoling the death of Dr. K. Rangaswami Iyer, a member of the Tiruchirapalli Branch of the Indian Medical Association, was moved from the Chair and passed unanimously all the members standing for a minute.

Minutes of the previous Council Meeting held on the 13th of August, 1955 was adopted.

The Screening Sub-Committee after medically examining and interviewing them selected the following three candidates and recommended their names to the Central Office:

1. Dr. (Mrs) Eva Rengala, Coimbatore.
2. Dr. Avadhani Krishnamurthi Mangalore.
3. Dr. George Jacob, Vellore.

Employee's State Insurance Scheme: "This Council regrets that the Government in the implementation of the Employees State Insurance Scheme in the Madras City has changed from the Panel System to the Service System of medical men to treat labourers in spite of the formation of the Allocation Committee for the Madras City with the representatives of the Madras City Branch of the Indian Medical Association and in spite of the fact that in Coimbatore the Panel System has been working very well and the relation between the medical men and the labourers being very good and harmonious. This Council also regrets that this change has been made in spite of the assurance given by the Government when the scheme was implemented in Coimbatore that in the working of the scheme the Indian Medical Association would be consulted. This Council requests the Government to revise its decision in this matter and accept the offer of the Indian Medical Association to work the scheme on the Panel System."

The Annual Report for the year 1954-55 by the Hony Secretary was accepted and adopted by the House.

The Audited Statement of Accounts and the Auditor's Report for the year 1954—55 by the Hony. Secretary was accepted and adopted by the House.

Election of Office-Bearers for the year 1955-56:

(i) Honorary Secretary :-Dr. R. Sankaran, L.M.P., Madras. (ii) Hony. Joint Secretary : Dr. C. Arumugham, M.B.B.S., Coimbatore. (iii) Hony. Treasurer :-Dr. P. B. Annangaracharıar L.M.P., Madras.

Election of 3 representatives from the Council of the Madras State Branch to the Working Committee of the Indian Medical Association for the year 1955—56:

Dr. Y. P. Vasudevan, Dr. U. Krishna Rau and Dr. T. V. Sivanandam, were duly declared elected as the three members of the Working Committee.

Renewal of Fixed Deposit :-The Hony. Secretary was authorised to renew the existing Fixed Deposit of Rs. 5000/- for a further period of one year and was also

authorised to invest a further sum of Rs. 2000/- in Fixed Deposit, thus making a total deposit of Rs. 7000/-

Budget Estimate for the year 1955-56 was adopted.

Appointment of an Auditor for the year 1955-56: The question of the appointment of the auditor for the Association for the year 1955-56 was left by the House to the Hony. Secretary with a request to report the result to the State Council at its next meeting.

Changing the name of The Miscellany to that of "The Madras Clinical Journal"

Resolution

"This Council resolves to change the name of the Miscellany, the official organ of the Madras State Branch of the Indian Medical Association into that of "The Madras Clinical Journal" from 1st Jan. 1956."

Resolution from Malabar Branch. I.M.A.- regarding the opening of a Medical College at Kozhikkode:

Resolution

"This Council resolves to request the Central as well as State Government to open a Medical College at Kozhikkode, Malabar District and to include the same in the Second Five Year Plan."

Report of the Sub-Committee for the Second Five Year Plan:

Resolution

"This Council regrets that in formulating the medical part of the Second Five Year Plan the Madras State Branch has not been consulted. The Branch was prepared to offer its whole-hearted co-operation to the Government in this matter. It feels that it is not correct to by pass an Association which represents a large body of medical men. It hopes that at least in future the Madras Government will consult the State Branch of the Indian Medical Association in all such matters."

Circulars of the Indian Medical Association, Central Office were read. Circulars of the Indian Medical Association, Madras State Branch were read.

Vote of thanks to the retiring office-bearers:

The Council placed on record its appreciation of the services rendered to the Association by the retiring office-bearers, namely the 2 Vice-Presidents and the Hony. Treasurer of the Madras State Branch and thanked them for the great service and co-operation they have rendered in running the State Branch in spite of their pressing personal avocations.

Vote of Thanks:

Resolution

"This meeting of the State Council of the Madras State Branch, Indian Medical Association places on record its appreciation and thanks for the office-bearers and the members of the Salem Branch of the Indian Medical Association for the excellent arrangements that they have made for the boarding, lodging and reception for members attending the State Council Meeting as well as the Tenth Madras State Medical Conference, 1955.

The meeting terminated at 8 P.M.

(Sd.) **Y. P. Vasudevan,**
President, Madras State Branch.

(Sd.) **R. Sankaran,** L.M.P.
Hony. Secretary, Madras State Branch, I.M.A.

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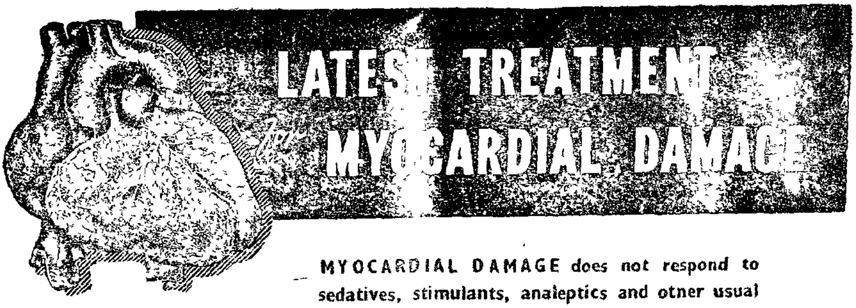

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ANNOUNCEMENTS

Subject: British Medical Journal — availability of copies to the members of Indian Medical Association on subscription at concession rate of Rs. 28—4—0 per annum.

The British Medical Association has very kindly agreed to supply the Indian Medical Association certain number of copies of the British Medical Journal at reduced rate of subscription as a concession at half the published price of the Journal, if subscribed through the Indian Medical Association. The rate of subscription under this scheme comes to Rs. 28—4—0 per annum which has to be remitted by intending subscribers to the Central Office, Indian Medical Association, THROUGH THE RESPECTIVE STATE / TERRITORIAL BRANCH. Such of the members of the Indian Medical Association, Madras State Branch, who are desirous of availing this opportunity are requested to inform the Honorary Secretary, Madras State Branch, Indian Medical Association, No. 6, Rajabadhar Mudaliar Road, Thyagarayanagar, Madras 17 and remit a sum of Rs. 28—4—0 to him by M. O. only towards the subscription of the British Medical Journal for one year, on receipt of which necessary action will be taken to enrol them as subscribers.

R. Sankaran, L. M. P.
Hony. Secretary, Madras State Branch,
Indian Medical Association.

THE ELEVENTH MADRAS STATE MEDICAL CONFERENCE TIRUCHY.

The Tiruchirapalli Branch of the I. M. A. had invited the Madras State Branch to hold its Annual Conference at Tiruchy sometime in October 1956. The State Council had availed itself of the invitation in its meeting at Tirunelveli in February 1956. It is expected to hold an attractive exhibition and also print a Souvenir of the Conference, in addition to an interesting 2 days scientific session.

Your cooperation is solicited and the local Secretary will feel thankful.

V. Ananthagiri,
Secretary, Tiruchy Branch.

REGISTERED No. M. 4839 *March-1956*

CIRCULAR

Venereal Diseases Department,
Government General Hospital,
Madras, dated 2nd Dec. 1955.

The undersigned has reasons to suspect that an increasing number of immediate and severe anaphylactic, sometimes [illegible] reactions to penicillin therapy have been occurring in the practice of private physicians as well as in hospitals. It is also the impression of the undersigned that such reactions are neither recorded nor reported. To obtain some factual data as to the validity of the suspicion the undersigned will be grateful if private physicians and surgeons would be good enough to intimate to the undersigned then and there any such reaction which may occur in their practice or in the practice of their colleagues. It is requested that the incident may be reported in the form appended below :

1. Sex :
2. Age :
3. Condition for which Penicillin was given :
4. Type of Penicillin :

Parenteral :

5. Mode of administration :

Topical :

6. Any history of previous administration of Penicillin :
7. The interval between the administration and onset of the anaphylactic shock.
8. Treatment administered for the shock.
9. Outcome : FATAL / NON FATAL

The object of this request is purely scientific and the undersigned further assures that reports are strictly confidential and if and when they are published no names will be disclosed.

(R. V. Rajam)
M. S., F. R. C. P., (Edin),
Director.

Dated 2—12—55

Edited and Published by Dr. R. Kalamegham B.A., M.B.B.S., Cantonment, Tiruchirapalli and Printed by : M. S. Rajarathinam Pillai at The Shivaji Printing Works, 3, Chinnakadai Street, Teppakulam P. O., Tiruchirapalli.